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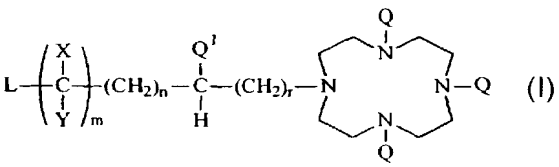
(54) Title: ACTINIUM-225 COMPLEXES AND CONJUGATES FOR RADIOIMMUNOTHERAPY



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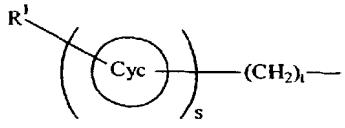

(1)

(57) Abstract: Actinium-225 (^{225}Ac) complexes with functionalized chelants of the formula (I) wherein: each Q is independently hydrogen or $(CHR^5)_pCO_2R$; Q^1 is hydrogen or $(CHR^5)_wCO_2R$; each R independently is hydrogen, benzyl or C_1-C_4 alkyl; with the proviso that at least two of the sum of Q and Q^1 must be other than hydrogen, each R^5 independently is hydrogen; C_1-C_4 alkyl or (C_1-C_2 alkyl)phenyl; X and Y are each independently hydrogen or may be taken with an adjacent X and Y to form an additional carbon-carbon bond; n is 0 or 1; m is an integer from 0 to 10 inclusive; p is 1 or 2; r is 0 or 1; w is 0 or 1; with the proviso that n is only 1 when X and/or Y form an additional carbon to carbon bond, and the sum of r and w is 0 or 1; L is a linker/spacer group covalently bonded to, and replaces one hydrogen atom of one of the carbon atoms to which it is joined, said linker/spacer group being represented by the formula (1) wherein s is an integer of 0 or 1; t is an integer of 0 to 20 inclusive; R^1 is an electrophilic or nucleophilic moiety which allows for covalent attachment to an antibody or fragment thereof, or synthetic linker which can be attached to an antibody or fragment thereof, or precursor thereof; and Cyc represents a cyclic aliphatic moiety, aromatic moiety, aliphatic heterocyclic moiety, or aromatic heterocyclic moiety, each of said moieties optionally substituted with one or more groups which do not interfere with binding to an antibody or antibody fragment; with the proviso that when s, t, m, r, and n are 0, then R^1 is other than carboxyl; their pharmaceutically acceptable salts, their conjugates and the use thereof for radioimmunotherapy is disclosed.

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